

What is claimed:

1. A method of identifying a nucleic acid molecule associated with a metabolic disorder comprising:

5 a) contacting a sample comprising nucleic acid molecules with a hybridization probe comprising at least 25 contiguous nucleotides of SEQ ID NO:1 or 4; and

10 b) detecting the presence of a nucleic acid molecule in said sample that hybridizes to said probe, thereby identifying a nucleic acid molecule associated with a metabolic disorder.

2. The method of claim 1, wherein said hybridization probe is detectably labeled.

15 3. The method of claim 1, wherein said sample comprising nucleic acid molecules is subjected to agarose gel electrophoresis and southern blotting prior to contacting with said hybridization probe.

20 4. The method of claim 1, wherein said sample comprising nucleic acid molecules is subjected to agarose gel electrophoresis and northern blotting prior to contacting with said hybridization probe.

5. The method of claim 1, wherein said detecting is by *in situ* hybridization.

25 6. A method of identifying a nucleic acid molecule associated with a metabolic disorder comprising:

a) contacting a sample comprising nucleic acid molecules with a first and a second amplification primer, said first primer comprising at least 25 contiguous nucleotides of SEQ ID NO:1 or 4 and said second primer comprising at least 25 contiguous nucleotides from the complement of SEQ ID NO:1 or 4;

30 b) incubating said sample under conditions that allow nucleic acid amplification; and

c) detecting the presence of a nucleic acid molecule in said sample that is amplified, thereby identifying a nucleic acid molecule associated with a metabolic disorder.

35 7. The method of claim 6, wherein said sample comprising nucleic acid molecules is subjected to agarose gel electrophoresis after said incubation step.

8. The method of any one of claims 1 or 6, wherein said method is used to detect mRNA in said sample.

9. The method of any one of claims 1 or 6, wherein said method is used to 5 detect genomic DNA in said sample.

10. A method of identifying a polypeptide associated with a metabolic disorder comprising:

10 a) contacting a sample comprising polypeptides with a 14273 binding substance; and

15 b) detecting the presence of a polypeptide in said sample that binds to said 14273 binding substance, thereby identifying a polypeptide associated with a metabolic disorder.

15 11. The method of claim 10, wherein said binding substance is an antibody.

12. The method of claim 10, wherein said binding substance is detectably 20 labeled.

20 13. A method of identifying a subject having a metabolic disorder, or at risk for developing a metabolic disorder comprising:

25 a) contacting a sample obtained from said subject comprising nucleic acid molecules with a hybridization probe comprising at least 25 contiguous nucleotides of SEQ ID NO:1 or 4; and

25 b) detecting the presence of a nucleic acid molecule in said sample that hybridizes to said probe, thereby identifying a subject having a metabolic disorder, or at risk for developing a metabolic disorder.

14. The method of claim 13, wherein said hybridization probe is detectably 30 labeled.

15. The method of claim 13, wherein said sample comprising nucleic acid molecules is subjected to agarose gel electrophoresis and southern blotting prior to contacting with said hybridization probe.

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16. The method of claim 13, wherein said detecting is by *in situ* hybridization.

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17. A method of identifying a subject having a metabolic disorder, or at risk for developing a metabolic disorder comprising:

5 a) contacting a sample obtained from said subject comprising nucleic acid molecules with a first and a second amplification primer, said first primer comprising at least 25 contiguous nucleotides of SEQ ID NO:1 or 4 and said second primer comprising at least 25 contiguous nucleotides from the complement of SEQ ID NO:1 or 4;

10 b) incubating said sample under conditions that allow nucleic acid amplification; and

15 c) detecting the presence of a nucleic acid molecule in said sample that is amplified, thereby identifying a subject having a metabolic disorder, or at risk for developing a metabolic disorder.

18. The method of claim 17, wherein said sample comprising nucleic acid molecules is subjected to agarose gel electrophoresis after said incubation step.

19. The method of any one of claims 13 or 17, wherein said method is used to detect mRNA in said sample.

20. The method of any one of claims 13 or 17, wherein said method is used to  
20 detect genomic DNA in said sample.

21. A method of identifying a subject having a metabolic disorder, or at risk for developing a metabolic disorder comprising:

25 a) contacting a sample obtained from said subject comprising polypeptides with a  
14273 binding substance; and  
b) detecting the presence of a polypeptide in said sample that binds to said  
14273 binding substance, thereby identifying a subject having a metabolic disorder, or at  
risk for developing a metabolic disorder.

30 22. The method of claim 21, wherein said binding substance is an antibody.

23. The method of claim 21, wherein said binding substance is detectably labeled.

24. A method for identifying a compound capable of treating a metabolic disorder characterized by aberrant 14273 nucleic acid expression or 14273 polypeptide activity, comprising assaying the ability of the compound to modulate 14273 nucleic acid expression or 14273 polypeptide activity, thereby identifying a compound capable of 5 treating a metabolic disorder characterized by aberrant 14273 nucleic acid expression or 14273 polypeptide activity.

25. The method of claim 24, wherein the metabolic disorder is a disorder associated with aberrant lipogenesis.

10 26. The method of claim 24, wherein the metabolic disorder a disorder associated with aberrant lipolysis.

15 27. The method of claim 24, wherein the metabolic disorder is obesity.

28. The method of claim 24, wherein the metabolic disorder is diabetes.

20 29. The method of claim 24, wherein the ability of the compound to modulate the activity of the 14273 polypeptide is determined by detecting the induction of an intracellular second messenger.

30. A method for treating a subject having a metabolic disorder comprising administering to the subject a 14273 modulator, thereby treating said subject having a metabolic disorder.

25 31. The method of claim 30, wherein the 14273 modulator is a small molecule.

32. The method of claim 30, wherein the metabolic disorder is a disorder associated with aberrant lipogenesis.

30 33. The method of claim 30, wherein the metabolic disorder is a disorder associated with aberrant lipolysis.

34. The method of claim 30, wherein the metabolic disorder is obesity.

35 35. The method of claim 30, wherein the metabolic disorder is diabetes.

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36. The method of claim 30, wherein said 14273 modulator is administered in a pharmaceutically acceptable formulation.

37. The method of claim 30, wherein said 14273 modulator is administered using  
5 a gene therapy vector.

38. The method of 30, wherein the 14273 modulator is capable of modulating  
14273 polypeptide activity.

10 39. The method of claim 38, wherein the 14273 modulator is an anti-14273  
antibody.

15 40. The method of claim 38, wherein the 14273 modulator is a 14273  
polypeptide comprising the amino acid sequence of SEQ ID NO:2 or 5, or a fragment  
thereof.

20 41. The method of claim 38, wherein the 14273 modulator is a 14273  
polypeptide comprising an amino acid sequence which is at least 90 percent identical to the  
amino acid sequence of SEQ ID NO:2 or 5.

25 42. The method of claim 38, wherein the 14273 modulator is an isolated  
naturally occurring allelic variant of a polypeptide consisting of the amino acid sequence of  
SEQ ID NO:2 or 5, wherein the polypeptide is encoded by a nucleic acid molecule which  
hybridizes to a complement of a nucleic acid molecule consisting of SEQ ID NO:1 or 4 at  
6X SSC at 45°C, followed by one or more washes in 0.2X SSC, 0.1% SDS at 50-65°C.

30 43. The method of claim 30, wherein the 14273 modulator is capable of  
modulating 14273 nucleic acid expression.

35 44. The method of claim 43, wherein the 14273 modulator is an antisense 14273  
nucleic acid molecule.

45. The method of claim 43, wherein the 14273 modulator is a ribozyme.

35 46. The method of claim 43, wherein the 14273 modulator comprises the  
nucleotide sequence of SEQ ID NO:1 or 4, or a fragment thereof.

47. The method of claim 43, wherein the 14273 modulator comprises a nucleic acid molecule encoding a polypeptide comprising an amino acid sequence which is at least 90 percent identical to the amino acid sequence of SEQ ID NO:2 or 5.

5 48. The method of claim 43, wherein the 14273 modulator comprises a nucleic acid molecule encoding a naturally occurring allelic variant of a polypeptide comprising the amino acid sequence of SEQ ID NO:2 or 5, wherein the nucleic acid molecule which hybridizes to a complement of a nucleic acid molecule consisting of SEQ ID NO:1 or 4 at 6X SSC at 45°C, followed by one or more washes in 0.2X SSC, 0.1% SDS at 50-65°C.

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49. A method for identifying a compound capable of modulating an adipocyte activity comprising:

- a) contacting an adipocyte with a test compound; and
- b) assaying the ability of the test compound to modulate the expression of a

15 14273 nucleic acid or the activity of a 14273 polypeptide; thereby identifying a compound capable of modulating an adipocyte activity.

50. The method of claim 49, wherein said adipocyte activity is hyperplastic growth.

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51. The method of claim 49, wherein said adipocyte activity is hypertrophic growth.

52. The method of claim 49, wherein said adipocyte activity is lipogenesis.

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53. A method for modulating an adipocyte activity comprising contacting an adipocyte with a 14273 modulator, in an amount effective to modulate an adipocyte activity.

54. The method of claim 53, wherein the 14273 modulator is a small molecule.

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55. The method of claim 53, wherein said adipocyte activity is hyperplastic growth.

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56. The method of claim 53, wherein said adipocyte activity is hypertrophic growth.

57. The method of claim 53, wherein said adipocyte activity is lipogenesis.

14273  
Modulator  
Method  
Claims

58. The method of claim 53, wherein the 14273 modulator is capable of modulating 14273 polypeptide activity.

59. The method of claim 58, wherein the 14273 modulator is an anti-14273 antibody.

60. The method of claim 58, wherein the 14273 modulator is a 14273 polypeptide comprising the amino acid sequence of SEQ ID NO:2 or 5, or a fragment thereof.

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61. The method of claim 58, wherein the 14273 modulator is a 14273 polypeptide comprising an amino acid sequence which is at least 90 percent identical to the amino acid sequence of SEQ ID NO:2 or 5.

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62. The method of claim 58, wherein the 14273 modulator is an isolated naturally occurring allelic variant of a polypeptide consisting of the amino acid sequence of SEQ ID NO:2 or 5, wherein the polypeptide is encoded by a nucleic acid molecule which hybridizes to a complement of a nucleic acid molecule consisting of SEQ ID NO:1 or 4 at 6X SSC at 45°C, followed by one or more washes in 0.2X SSC, 0.1% SDS at 50-65°C.

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63. The method of claim 53, wherein the 14273 modulator is capable of modulating 14273 nucleic acid expression.

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64. The method of claim 63, wherein the 14273 modulator is an antisense 14273 nucleic acid molecule.

65. The method of claim 63, wherein the 14273 modulator is a ribozyme.

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66. The method of claim 63, wherein the 14273 modulator comprises the nucleotide sequence of SEQ ID NO:1 or 4, or a fragment thereof.

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67. The method of claim 63, wherein the 14273 modulator comprises a nucleic acid molecule encoding a polypeptide comprising an amino acid sequence which is at least 90 percent identical to the amino acid sequence of SEQ ID NO:2 or 5.

68. The method of claim 63, wherein the 14273 modulator comprises a nucleic acid molecule encoding a naturally occurring allelic variant of a polypeptide comprising the amino acid sequence of SEQ ID NO:2 or 5, wherein the nucleic acid molecule which hybridizes to a complement of a nucleic acid molecule consisting of SEQ ID NO:1 or 4 at 5 6X SSC at 45°C, followed by one or more washes in 0.2X SSC, 0.1% SDS at 50-65°C.

69. A method for modulating glucose production in a cell, comprising contacting said cell with a 14273 modulator in an amount effective to modulate glucose production in said cell.

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70. A transgenic mouse whose genome comprises a homozygous null mutation in the endogenous 14273 gene, wherein said mouse exhibits a metabolic disorder.

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disorder, comprising:

15 disorder, comprising:

administering said compound to a transgenic mouse whose genome comprises a null mutation in the endogenous 14273 gene, wherein said mouse exhibits a metabolic disorder, and determining the effect of the test compound on said mouse, thereby identifying a compound capable of treating a metabolic disorder.

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72. An isolated cell, or a purified preparation of cells from a transgenic mouse whose genome comprises a homozygous null mutation in the endogenous 14273 gene, wherein the production of functional 14273 is inhibited.